

# BIOCHEMISTRY WITH A MEDICAL PERSPECTIVE

Online Biochemistry Course, Faculty of Medicine, University of Toronto, Canada

## Course Schedule

Fall Semester 21 September 2020 to 20 Feb 2021

Week	Section / Online Quiz	Dates (Week Start)	Video Lecture Topics	Lecturer	Text Chapter	Clinical Insights By Dr. Murray
1 & 2	<b>Biochemistry Basics and Proteins</b>	21 Sep 2020	Course Introduction to Biochemistry Water and pH Amino Acids Protein 3D Structure	Dr. Reithmeier	1 2 3 4 5	Water and pH Balance Vitamin C Deficiency Causes Scurvy
	<b>Quiz 1</b>	<b>05 Oct 2020</b>				
3 & 4		05 Oct 2020	Enzymes Hemoglobin	Dr. Baker	6-8 9	Variations in Km Can Have Physiological Consequences Sickle Cell Anemia
	<b>Quiz 2</b>	<b>19 Oct 2020</b>				
5 & 6		19 Oct 2020	Carbohydrates Lipids Membranes: Structure and Function	Dr. Baker Dr. Reithmeier	10 11 12, 13	Lactose Intolerance Digitalis
	<b>Quiz 3</b>	<b>02 Nov 2020</b>				
7 & 8	<b>Metabolism</b>	02 Nov 2020	Metabolism, Glycolysis Glycogenolysis PDC, TCA, ETC, Ox.Phos/PMF	Dr. Baker	15, 16 24 18 – 21	Exercise Depends on Various Means of Generating ATP Beriberi-A Disease Due to Deficiency Of Thiamine (Vitamin B-1)
	<b>Quiz 4</b>	<b>16 Nov 2020</b>				
9 & 10		16 Nov 2020	Fat Catabolism, Fat Synthesis Insulin Glycogen Synthesis Diabetes GNG	Dr. Baker	27-29 13, 27 25 27 17	Hyperglycemia GSDs
	<b>Quiz 5</b>	<b>30 Nov 2020</b>				

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11 & 12		30 Nov 2020	Cholesterol Lipoproteins Eicosanoids PI Synthesis and Signalling AA Synthesis and Degradation	Dr. Baker   Dr. Reithmeier	29 29 28 29, 13 30, 31	Tay-Sachs Disease Inherited Defects Of The Urea Cycle Cause Hyperammonemia
	Quiz 6	14 Dec 2020				
13 & 14	Nucleic Acids	14 Dec 2020	Nucleic Acid Structure Nucleotide Metabolism DNA Replication DNA Repair	Dr. Kelley Dr. Reithmeier Dr. Kelley	33 32 34 35	Some Genetic Diseases Are Caused by The Expansion of Repeats of Three Nucleotides Cancers Are Caused by Defective Repair of DNA
			<b>BREAK (21 Dec 2020 to 03 Jan 2021)</b>			
	Quiz 7	11 Jan 2021				
15 & 16		11 Jan 2021	Transcription Gene Expression, Regulation RNA Processing	Dr. Kelley	36 37 38	Mutations that Affect pre-mRNA and Alternative Splicing Cause Disease
	Quiz 8	25 Jan 2021				
17 & 18		25 Jan 2021	Genetic Code, tRNAs and Amino Acids Translation, Translation Regulation Protein Secretion Recombinant Technologies	Dr. Kelley	39 40 40 41	Some Antibiotics and Some Toxins Act by Inhibiting Protein Synthesis Gene Therapy, Transgenic Animals
	MOCK Quiz	Available 08 Feb 2021				

## Final Examination 2021

### Date

20 February 2021

### Time

3 hrs

### Material Tested

Final exam includes all topics covered throughout the course